PHILADELPHIA NEUROLOGICAL SOCIETY.

Stated Meeting, January 26, 1885.

The President, S. WEIR MITCHELL, M.D., in the chair.

Dr. H. C. WOOD presented to the Society the feet of an ataxic patient illustrating Charcot's joints.

The specimens were from the Mütter Museum of the College of Physicians, the feet of an ataxic patient that had been under his care at the University Hospital. He expressed the opinion that there was a close relation between this disease of the bones in ataxic cases and syphilis.

A paper was read by A. SYDNEY ROBERTS, M.D., by invitation, on "The Spinal Arthropathies," a clinical report of six cases of Charcot's joints.

CASE I.—M. K., male, æt. forty-one, referred to the New York Orthopædic Dispensary from St. Luke's Hospital on May 5, 1879. Hereditary history unusually good. He is a moderate drinker. Health excellent until manifestation of present joint trouble. Married and the father of five healthy children.

Condition on date of entry : A large nodular tumor was found over the left hip-joint, oval in shape, the long axis of which corresponds with line of Poupart's ligament. Transverse diameter of normal limb over hip-joint, 22 inches ; of affected limb at same point, 30¼ inches. No muscular atrophy detected by measurements of circumference. Left limb 1⅝ inches shorter than its fellow ; measurements made from the umbilicus. External iliac fossa of left side filled with osteophytes, which add to bulk of tumor. The ligamentous structures about the joint seem entirely destroyed ; motion of limb abnormally free in all directions. Head of femur probably absorbed or greatly atrophied. Limb abducted and rotated outward. What appears as the head of the femur is anterior to its normal position, lying under a "shed" of bone, built out from the pelvis, which covers its atrophied extremity like an umbrella. When the patient flexes the limb, the upper extremity of the femur glides forward until it catches under this shed of provisional bone, which, acting as a fulcrum, allows the patient to flex and rotate the limb with ease.

A thorough examination of the patient for evidence of a central lesion, revealed the absence of numbness of limbs, of pain, or of constricting bands ; sensation slightly impaired on left side. On right side, reflex action increased on titillation of soles ; none on left. No tendon reflex in either limb. Sways with "closed-eyes test."

Condition eighteen months later : The patient presented all the marked symptoms of locomotor ataxia. Two years from date, upon which the above notes were recorded (May 5, 1879), he is confined to bed, with complete loss of muscular coördination.

Remarks.—The case exhibits an arthropathy existing four and a half years prior to the development of active tabetic symptoms, and shows a tendency, from early stages, to the formation of osteophytes about the joint, with early atrophy of the upper epiphysis of the femur.

At no time during the progress of the lesion were there developed reflex neural symptoms that would point to joint inflammation.

The joint lesion (swelling and tumefaction) diminished as the active symptoms of ataxia advanced. Provisional callus was thrown out about the atrophied extremity of the femur as a substitute for the destroyed acetabulum.

CASE 2.—Male, æt. forty-four. Registered as an out-patient in the New York Orthopædic Dispensary on January 29, 1879. The following notes were recorded :

Hereditary History.—Parents living and healthy ; one brother died of phthisis. Patient is married ; has three children, two in excellent health ; the third has an intrapelvic abscess. (Subsequently died of amyloid degeneration of the kidneys. Patient has had to work very hard, with considerable mental anxiety ; no other known cause for present disease.

The left knee and ankle are enlarged, the latter more so relatively than the knee. The patient states that seven years ago, while working, a heavy box fell upon him, injuring the ankle. The joint became swollen, and he was "laid up for two months." He recovered, and suffered no inconvenience for one year ; the swelling again returned in the same ankle and involved the entire leg. At this time he was incapacitated from work for three months ; he recovered, and has had no active joint symptoms since. Has never had an abscess about the joint.

The urgent symptoms at present examination are those of locomotor ataxia. He cannot walk without staggering, and when attempting to do so in the dark, or with closed eyes, falls. Suffers from ataxic pains in the right leg and arm. Is uncertain in guiding his finger to the tip of his nose, with eyes closed, or in putting his heel on a designated spot. Sensation impaired in right hand and arm ; has difficulty in buttoning his coat with that hand. When standing or walking in his bare feet, he feels as though he were on cushions ; vision unimpaired (eye-ground not examined).

On February 4, 1879, Dr. Cloves Adams saw the patient in consultation, and thought him to be suffering from locomotor ataxia in the third stage, with osseous changes in left ankle and synovitis of both knees.

The patient returned to the Dispensary in September of the same year, with a marked elastic swelling of the right elbow-joint.

A year later (November, 1880) he was referred to the clinic of Dr. E. C. Seguin. He again applied to the Orthopædic Dispensary on February 14, 1881. The ataxic symptoms had advanced ; he walked with extreme difficulty. The condition of the joints remained about the same as when last examined, now four months ago.

During November (1881) the patient was critically examined by Dr. S. Weir Mitchell, and pronounced to be in the third stage of locomotor ataxia, with spinal arthropathies of the right elbow- and left ankle-joints. It was noted that the circumference of the elbow tumor had materially diminished since the last measurements were recorded (decrease of two and a half inches).

Remarks.—The joint enlargements in this patient presented three characteristic peripheral ataxic conditions.

1st. At the knee-joint synovial irritation, indicated by the physical signs of a chronic synovitis; although at no time during its course was there evidence of inflammation.

2d. A characteristic doughy, nodular ataxic joint tumor of the elbow, largely composed of osteophytes and excessive synovial secretion.

3d. Hypertrophy of the lower epiphyses of the tibia and fibula, with but slight synovial irritation.

The peripheral manifestations at the knee and ankle accompanied the earlier symptoms of ataxia; the elbow tumor entered abruptly upon the second stage of the sclerosis. I am indebted to my friend Dr. Newton M. Shaffer, of New York, for the privilege of reporting the above notes.

Case 3.—J. H., male, æt. forty-five; was admitted to my wards in the Philadelphia Hospital on April 3, 1883. The following notes were recorded : A vigorous, well-nourished man, with little personal knowledge of his family or their history. Knew his parents lived to advanced age, but thought both of his brothers had died, and likewise two sisters. Acknowledged to being strongly addicted to the use of alcohol. He thought his present trouble arose from a "dissipated life and constitutional syphilis."

Two years ago, after a debauch, his attention was directed to painful swelling of his right great toe. This lasted a few days, and as the pain and swelling of the toe subsided, the right ankle-joint enlarged. This swelling slowly and painlessly increased, and three months from its onset the same condition appeared in the left ankle-joint. Without especial discomfort to the patient this joint enlarged. He continued drinking to excess, and was admitted to the hospital in a state of chronic alcoholism.

An examination two weeks after admission, when all traces of alcoholism had subsided, gave evidence by the following facts of a central lesion : He had suffered from constricting pains about the abdomen, and occasional darting pain in the region of the hips and thighs for the past year. He also experiences considerable difficulty in walking, especially at night. At present he has a staggering gait. Absence of patellar reflex in both limbs ; sways and falls with "closed-eyes test," and has difficulty in finding tip of nose with forefinger when eyes are closed.

The metatarso-phalangeal articulation of the right great toe is ankylosed. Both ankle-joints are enlarged, apparently by a diffuse hypertrophy of the epiphyses of tibia and fibula. This increase has almost doubled their normal circumference. The subcutaneous tissues are slightly œdematous. The capsules of ankle-joints are distended and elastic.

When first admitted, the tissues about the ankles and legs were swollen, presenting the appearance of diffuse cellulitis. This subsided in a few days from rest and local treatment.

My colleague, Dr. C. K. Mills, saw the patient with me in consultation, and confirmed the diagnosis I had made—of posterior spinal sclerosis, with accompanying arthropathies at ankle-joints.

Remarks.—The joint hypertrophy had preceded any active symptoms of ataxia. The character of the joint enlargement was that of bony hypertrophy, without a tendency to the formation of osteophytes or to a nodular irregularity of contour. The possibility of rheumatism or of malignant disease was considered and dismissed. A thorough physical examination failed to detect any of the characteristic reflex neural symptoms of an epiphyseal osteitis.

The history of the progress and course of the ankle-joint hypertrophy, together with the evidence of a central lesion and the negative physical signs of local joint inflammation, all confirmed the diagnosis of an arthropathy of spinal origin.

CASE 4.—Dr. A. A. Y., male, aged sixty-five, resident of Hammonton, N. J. Examined the patient with Dr. S. Weir Mitchell on January 16, 1885. For the substance of the following notes I am indebted to Dr. Woodnutt.

History of patient: Family history excellent. He had always been strong and healthy during youth and up to 1865, though a hard-working farmer. An army life, and three years of extreme exposure prior to the close of the war, found him suffering in 1865 from sharp, wandering pains in the upper and lower extremities; never noticed, however, in the articulations. Loss of power followed in the right leg. Three years later suppurative arthritis attacked the metatarso-phalangeal articulation of the right great toe, and last phalanx of left ring finger, sequestra coming away in each instance.

During 1870 the patient first noticed an œdematous swelling of the right elbow; following shortly upon this, the wrist-joint of the same arm gradually and painlessly enlarged. Then a distention of the capsule of the right knee-joint succeeded. The enlargement of the latter articulation was more rapid than either the wrist or elbow. Rheumatic pains in the joints accompanied the swelling and deformity.

The left limb has been comparatively exempt from pain. Recently, however, the capsule of the knee-joint has become distended and elastic. The elbow tumor has diminished somewhat in circumference during the past four years.

During the past year the distal phalanx of the right index finger has gradually atrophied, without inflammation, and is entirely wanting. The nail and finger end are normal, though somewhat shortened. Pain at present is chiefly in both feet, paroxysmal and erratic, often attacking corresponding points on the legs.

The present appearance of the right elbow- and left knee-joint enlargements exhibit an irregular nodulated hypertrophy, bearing no resemblance to normal joint outline, and consisting chiefly of osteophytes and abnormal increase of synovial fluid. Motion preternaturally free in all directions; structure of joints apparently entirely destroyed.

Remarks.—The joint lesions first appeared in this patient after ataxia had become established. The appearance of the affected elbow and knee is that of an enormous nodular hypertrophied mass of bone, doubling their normal circumference, associated with synovial distention of the capsule. Osteophytes readily movable within the capsule, and varying in size from a pigeon's egg to that of a turkey.

The atrophy of the distal phalanx of the right index finger is especially to be noted, it being the first instance of complete absorption of the diaphysis of bone that I have had an opportunity of observing.

CASE 5.—W. H. McC., male, æt thirty-eight, married. Admitted to the Orthopædic Dispensary of the University Hospital in July, 1883.

Hereditary history excellent; no evidence could be obtained of articular disease, rheumatism, or phthisis in any member of his family. He presented at date of examination the appearance of a healthy, well-nourished man. Has always worked industriously at his trade of plumber. A moderate drinker. He had constitutional evidence of syphilis, following a chancre contracted in 1863.

The patient attributes the present enlargement of the right ankle-joint to an injury received while working in a cramped position. Following this strain, the ankle became suddenly discolored and swollen, bursting the buttons from his shoes. He was incapacitated for work during the succeeding four days; at the end of a week the discoloration and swelling had about disappeared. His attention was then first directed to a bony enlargement of the right ankle-joint. This slowly and painlessly increased in size without any appreciable interference in locomotion. At present examination the enlargement resembles a simple hypertrophy of the lower epiphyses of the tibia and fibula. The outline of the joint is globular, with slight elasticity of capsule. No pain or reflex muscular spasm.

Record of Spinal Symptoms.—Complains of darting pains about hips. Has difficulty in walking at night. Sways with closed eyes. Complete absence of patellar reflex on both sides. Dr. Horatio C. Wood saw him with me in October of 1883, and pronounced him ataxic.

Remarks.—This case presents an arthropathy that apparently followed a direct traumatism to the affected limb. From careful interrogation, I determined that the acute swelling and ecchymosis resulted from rupture of a varicose vein, inasmuch as these were numerous, and greatly engorged about the affected ankle. This first attracted his attention to the ankle, the deeper bony growth being detected when the active symptoms of subcutaneous swelling had subsided.

The hypertrophy of the joint has increased the circumference four and a half inches over its fellow.

CASE 6.—A specimen of shoulder-joint arthropathy, lately removed at an autopsy held upon the body of a well-marked ataxic, has been referred to me by Dr. S. Weir Mitchell, to embody in this report. The joint had become suddenly and painlessly enlarged in the later stages of the central lesion. It presented *ante mortem* all the characteristic symptoms of a tabetic arthropathy; distention of the capsule, abnormal mobility, and the presence of osteophytes. The joint, upon examination, presented the following:

1st. Cartilag ecovering head of humerus eroded; that upon glenoid cavity irregularly thickened.

2d. Anterior margin of glenoid cavity worn away, allowing the head of bone to rest in position of forward dislocation.

3d. Osteophytes abundant about junction of capsule with anatomical neck. Marked relaxation of ligamentous structures, and distention of capsule.

4th. General hypertrophy of epiphysis, somewhat nodular at margins. Evidences of hydrarthrosis.

The practical deductions to be drawn from a clinical study of the above somewhat anomalous cases may be briefly summarized as follows:

Period of Development.—1st. The tabetic arthropathies may occur independently, or precede the active symptoms of locomotor ataxia.

2. They occasionally develop suddenly, late in the course of a posterior spinal sclerosis.

Nature of Lesions.—The peripheral expression of central nerve irritation is characterized by the following changes found in the structure of the various articulations:

1st. A chronic asthenic hyperæmia of the synovial membranes; a hydrarthrosis.

2d. An interstitial atrophy of the epiphyses.

3d. A fungous or rarefying epiphyseal hypertrophy.

4th. The formation of osteophytes and bony stalactites.

These various joint expressions characteristic of the spinal arthropathies may exist separately; but are usually combined in the same subject.

Differential Diagnosis.—They may be readily distinguished from the common inflammatory lesions of the epiphyses by the total absence of the reflex neural phenomena—*i. e.*, of pain, both reflex and local, the apprehensive state regarding joint movements, and the reflex or tetanic spasm of the muscles, always associated with joint arthritis. Abscess is never directly associated with the arthropathies, unless incident upon direct traumatism.

They are more difficult to differentiate from malignant disease of the articulations; but a careful inquiry into the history and course of the lesion, and the presence or absence of central disturbance, are our most reliable guides.

Course.—The progress of the arthropathies is essentially chronic. Occurring early, not infrequently, in the history of the tabetic lesion, they slowly increase, with occasional exacerbations, and years elapse before fully matured. A rapidly developing arthropathy may be associated with the later stages of an ataxia. Their course is self-limiting, though never reparative.

Dr. MORRIS J. LEWIS reported a case of locomotor ataxia with loss of teeth and alveolar processes. The following anomalous case of locomotor ataxia has been under my care for three months in the Episcopal Hospital. He is now under the care of Dr. Henry M. Fisher, who courteously allows me to use the notes of the case.

Mr. A., æt. forty-five, a well-marked ataxia for over five years, presents the following history, some points of which seem well worthy of record. Nasal catarrh exists in several members of the family, including himself. During the war he was wounded in the hip and ankle, slightly; the wounds healed kindly. He was confined for some time in Libby and Belle Isle prisons, and since then has never felt strong. He denies having had syphilis. When thirty-nine years of age he began to show the first symptoms of ataxia; these were diplopia, dizziness, and a staggering gait. One and a half years later he began to have lancinating pains in the extremities, and later in the bowels. Five years ago he began to have transient attacks of difficulty of hearing, and this has increased since then until about one year ago, when he became absolutely deaf.

He has always been constipated, and one year ago had slight difficulty in urination. Within the last seven months he has had severe gastric crises. Eyesight good until the last seven or eight months, except during the first year. Four years ago the symptom for which I present the case to-night first appeared. This was a loosening and a subsequent falling out of the lower wisdom teeth. No pain nor discomfort preceded this, and the teeth were perfectly sound. In fact he had an uncommonly fine set of teeth. After this his teeth gave him no trouble until about seven months ago, when the same change began in the upper jaw, causing the loss of every tooth except the right first molar, which still remains firm.

The sequence of these events appears to be as follows: First, the teeth loosen, then the gums recede, showing in places the alveolar processes denuded, the teeth then fall or are pulled out by the fingers, and finally the alveolar processes separate in small fragments, with slight suppuration, or are detached in larger pieces. The gum then heals. The largest piece of bone thus separated shows the sockets of three incisor teeth, and a portion of a fourth. The teeth show no absorption of their fangs, and are almost without exception perfectly sound. About four months elapse between the loosening of a tooth and the final healing of the gum.

Other points of interest in this case are as follows: the patient is extremely pallid; he has the ataxic gait, although this is not very pronounced. He cannot stand with eyes closed. The knee-jerk is absent, and has been for at least four years. There is no anæsthesia of the feet or legs, and the patient localizes touch fairly; there is, however, some analgesia. There is no retardation of sensation. Examination of the eyes shows external strabismus of both eyes. Pupils pin-point for near accommodation, and relax for distant vision; no reaction to light. Ophthalmoscopic examination shows left eye-ground normal, and but slight atrophy of nasal border of right disk. His sense of smell and of taste is good. There are no lesions in any of his joints to be detected.

Dr. LAMBERT OTT presented a case of locomotor ataxia with Charcot's joints.

S. H., aged forty-five years, a travelling salesman. In 1866 he contracted chancre, no secondary symptoms following. In May, 1881, his present disease began with shooting pains in limbs and unsteadiness of gait. In November, 1883, I first saw him and diagnosticated his condition as locomotor ataxy. At the present time there is very little missing that goes to make up the symptom-group of this disease. In December, 1883, about two and a half years after the beginning of his trouble, he noticed a swelling of his left ankle. In the morning it seemed less, and in the evening it had increased to such an extent as to cause difficulty in taking off his boot. He had no pain, no impediment in using the joint, and had it not been for the swelling he would not have taken any notice of it. He thinks the swelling reached its maximum in two weeks, and there has been no great variation since, except that in the evening it is slightly increased. At present his foot is moved normally, but when the back of the leg is grasped and extreme flexion made, crepitation is imparted to the hand; the swelling is confined to the inner and dorsal surfaces of the ankle-joint, and feels bony. The joint measures in circumference one and a half inches, the leg at midcalf one half inch more than the opposite limb. There is no pain or tenderness on pressure or rough usage. He has been under treatment fourteen months, and has taken corrosive sublimate and chloride of gold and sodium. The electrical treatment at first was central galvanization and general faradization, and latterly the metallic brush, with the rapidly interrupted faradic current, with marked improvement.

The next paper was entitled "Note as to the Comparative Effects of Active Voluntary Exercise, and of Passive Exercise by Massage, on the Production of Albuminuria," by W. B. KEEN, M.D.

At the request of Dr. Mitchell I desire to call your attention, briefly, to one point of value in the use of massage, heretofore, so far as I know, unrecognised.

A patient, Mr. C., called upon me for relief from quite severe, constant, and long-continued pains in the calves of his legs. During the preceding year he had walked, as a matter of exercise, neary two thousand miles, and during the year before that had travelled around the world, making long rides and walks a marked feature of his trip.

In examining his case thoroughly I found that he had an albuminuria, the sediment forming (by heat and nitric acid) a varying bulk, on standing, of say from 3 to 10 or 15 per cent. This albuminuria I found, on further and most careful examination, to be curiously dependent upon exercise. This I finally tested in the following way: I put him in bed for three days, and examined three and sometimes four specimens of urine passed at different times in the twenty-four hours. No albumen appeared at any time during these three days of rest. The last examination I made at his house at 1 P.M., on the third day. He emptied his bladder at that hour, and the urine was free from albumen. He then dressed and walked, by a pedometer, a measured mile. Immediately on returning he passed water which had about 5 % of albumen. One hour later it had still a trace; two hours after the walk it was free. The next morning's urine was still free, but that passed at 9:30 A.M., at my office, after walking from his home, a mile distant, had again about 5 % of albumen.

A few days later I employed massage. This was thoroughly done for from forty to fifty minutes, by a most competent rubber. Examining the urine immediately before and immediately after the massage, both specimens were absolutely free from albumen. This I tested several times with identical results.

This is a striking addition to Dr. Weir Mitchell's observations as to the resulting tissue-changes induced by massage, and especially shows its value as a means of passive exercise without deleterious effects through nervous exhaustion. I believe the value of the massage to lie in the resulting stimulation to the muscular tissue, and the promotion of its nutrition without such changes of blood pressure and vasomotor tonus in the muscular coat of the vessels as induced the curious albuminuria after voluntary exercise above noted. The very probable nervous origin of albuminuria, as shown by its frequency in cases of long-continued nervous strain, and by the researches of DaCosta and Longstreth, would seem, also, to have a new confirmation by this observation. I regret that I did not at the same time observe the blood pressure by the sphygmograph, as it might have thrown additional light on the unusual facts above detailed.

My attention has also been called by Dr. Mitchell to an article on "Albuminuria as a Symptom," by the late Dr. Calvin Ellis, in the *Boston Medical aud Surgical Journal*, 1880, vol. xxv., p. 388.

The following somewhat analogous cases are referred to by him: In one case (Dukes: "The Albuminuria of Adolescents," *British Medical Journal*, Nov. 30, 1878, p. 794), a young man's urine was normal while in bed. On rising and taking milk only it would continue so, but after eating a piece of bread the albumen would appear. As he improved while lying in bed, meat could be eaten without any change in the urine.

While this would look to digestive changes as a cause, the so-called post-cibal albuminuria, the following cases are more positive evidences of the effects of exertion in the production of albuminuria:

Edlefsen (*Berl. klin. Wochen.*, Sept. 22, 1879) noticed in three healthy but anæmic men transient albuminuria after exertion. Leube (*Virchow's Archiv*, v., 72, p. 145) examined the urine of a large number of healthy soldiers in the morning, and found it normal, but after a five-hours' march or severe exercise, in June, July, and August, with a temperature of 54° to 77° F., it contained albuminuria in 16 %, though the amount was small and never exceeded 1 %, and there were neither casts nor blood corpuscles. This could not be detected at a later examination, between 4 and 6 P.M. The same was seen under similar circumstances in army officers in connection with scanty urine, and also in nervous persons. (Fürbinger, *Zeitsch f. klin. Med.*, I, p. 345.)

"It is most natural to suppose that its presence was owing, either to some variation in the blood pressure, or to some change in the vessels. The rapidity of its appearance and disappearance makes it extremely improbable that there was any change in the vessels, and we are left with a variation of the blood pressure. The view that the last might be operative seems to be supported by the statement of Ranke, that the blood accumulates in the muscles of a healthy man during exertion, while it is diminished in the organs which are at rest."

I may mention that in the case of Mr. C., in the course of a year the albumen has become constant, though his exercise has been restricted to the least degree consistent with health; but the amount is never over a faint trace. At no time have any casts or blood been discovered. A prolonged sea voyage is now being tried as a means of cure.

A paper was read by invitation on "Hysterical Affections of the Eye," by GEO. C. HARLAN, M.D.

As it is well known, patients in the psychological condition called hysterical, may not only present almost any symptom of disease, without the existence of any lesion to which such symptom could be referred, but sometimes make excursions beyond the limits of classical pathology, and puzzle their doctors by originating symptoms that no possible lesion could explain.

It has seemed to me that the eye is an exceptionally pregnant seat of such affections, and that their occurrence there has hardly received the attention from neurologists, or perhaps even from ophthalmic surgeons, that might with advantage be given to it. The accuracy with which eye symptoms may be analyzed, and the comparative certainty with which material changes in the tissues of this organ may be excluded, afford special facilities for the study of its functional, neurotic disturbances, which may often furnish the key to mysteries in other regions.

It is not my intention to trespass upon your time and patience by an extended discussion of this rather wide subject, but merely to direct attention to it by describing some of the symptoms of this class that have been met with in my own experience. As the shortest way of accomplishing this end, I will consider them in the anatomical order of the parts affected.

The lids are subject to both spasm and paresis of an entirely hysterical character. The former was well illustrated by a case recently published in the *Medical News*, in which violent and persistent blepharospasm, which had resisted other treatment for months, was cured at last by mental impression. The latter occurs in a singular form of transient paresis of the levator, occurring only on rousing from sleep.

The subjects of this affliction complain of a great difficulty, sometimes an entire impossibility, of opening the eye on awakening. In some cases this occurs always in the morning, in some even after a nap during the day, and in others only when aroused during the night, when perhaps the consciousness and will-power are regained less promptly. Such patients say that the lids seem too heavy to be moved by their own muscles, but after they have raised them with the finger, or bathed them in cold water, the difficulty does not recur until they sleep again. My attention was first called to this symptom some ten years ago, and I have met with so many cases since that I have come to consider it not very uncommon. Both eyes are usually equally affected, but in several instances only one was involved. In one of the latter now under my care, the affected lid has a slight degree of granular conjunctivitis, which could scarcely have other than a mental influence as a cause. With one exception the subjects were all delicate women, some of them nursing. Of course this is not a symptom to be lightly considered, without a careful investigation of the patient's general condition. The first time that I noticed it, it was one of the earliest indications of intracranial tumor, which, a few months later, caused the patient's death.

Irregular action of the external muscles of the ball is so frequently met with in nervous subjects, that a well-known ophthalmic surgeon has discovered it to be the cause of nearly all the ills that nerves are heir to, and claims to remedy these ills by operating on the muscles. In fact, the external ocular muscles of hysterical patients are, in a large proportion of cases, not much better balanced than their minds, and, no doubt, decided results may sometimes be obtained by operating at the same time on both.

The most common form of this disturbance is insufficiency of the internal recti, which frequently occurs independently of any error of refraction. When very decided in degree, it may easily be detected by directing the patient to look at some small object eight or ten inches from the eyes, and then holding the hand before one eye. The covered eye, thus relieved from the effect of binocular vision, will deviate outward. In some cases the preponderance of action is with the internal recti, and in others no two examinations made in different days will give the same result.

A spasmodic contraction of one muscle is more rare. I reported the following well-marked case some years ago (*Transactions of the Phila. Col. of Physicians*, '76):

Miss M., a little below par in general health, and of extremely nervous temperament, complained that frequently, and without special exciting cause, as at the dinner-table, or at the opera, every thing suddenly appeared double, and at the same time it was evident to her that she had lost control of the movements of one eye, which felt as if forcibly turned to one side. On closing the lids and pressing the ball for an instant, the symptoms would disappear. The acuteness of vision was normal, the balance of the external muscles correct, and refraction nearly emmetropic. The correction of an hypermetropia of .75 D. did not prevent the recurrence of the annoyance. Two other patients have complained of occasional transitory diplopia; in one case horizontal, and in the other vertical. These patients occasioned much anxiety at the time—one ten years, and the other about six months ago,—but I have seen both recently, and they are in good health. In this connection may be mentioned two curious cases of monocular diplopia. In each the symptom persisted for several weeks, but was without physical cause, and disappeared without special treatment.

The case recently reported (*Med. News*) of hysterical mydriasis and paralysis of accommodation, occurring in one eye only, persisting for months, and finally relieved by mental impression, is, I believe, unique. There can be no suspicion of deception here, as there is no known mydriatic whose effects can be made to disappear so promptly and completely as these symptoms did.

Paresis or spasm of the accommodation is not infrequent in neurotic subjects. The latter occurs usually, though by no means always, in connection with some error of refraction, which acts as the exciting cause.

Retinal anæsthesia is a symptom which often occasions great annoyance to ophthalmic surgeons in testing refraction. Its subjects may at one moment have full acuity of vision, while at the next, with the same glass, it is very much diminished. They say that the letters become blurred and fade away after they have looked at them for a few seconds. The fact that this symptom persists under atropia shows that it is due, not to irregular action of the accommodation, but to exhaustion of the sensibility of the retina.

This condition of the retina makes the typical hysterical field of vision more restricted on the side that is recorded last in the testing. Such fields, the tracing and discussion of which have afforded much entertainment to the curious, are rarely found the same at any two examinations. A patient recently presented herself at the Polyclinic with complete horizontal hemianopsia of the right eye only. There was complete blindness below the horizontal line. As the ophthalmoscopic appearances were normal, I suspected hysteria. At her next visit the hemianopsia had disappeared from the right eye and appeared in the left, still in the lower half of the field, but with an irregular border. It was several times transferred from one eye to the other, each time with a more irregular outline, and after a few weeks disappeared entirely, leaving the field in both eyes quite normal.

I have met with several cases of colored vision—blue streaks, yellowish fogs, etc., of transitory character and evidently nervous origin.

Unsteadiness, or even apparent constant motion, of any object looked at, particularly print, occasionally occurs and, not admitting of any physiological or optical explanation, may be classified as hysterical.

The most striking symptom, and the one that has naturally excited the most interest, is simulated blindness. For obvious reasons of expediency, this is usually monocular. At various times in the last ten or twelve years, I have reported four well-marked cases (*American Journal of Medical Sciences*, October, 1873; *Transactions of American Ophthalmological Society*, 1882 and 1884). Two were cured by exposure, and the others got well without ever knowing that they were suspected—possibly without having suspected themselves. One of them had a history of an attack of complete blindness, evidently of the same character, of both eyes occurring some time previously; and another such case has been reported by Dr. D. H. Agnew (*American Journal of Medical Sciences*, October, 1873).

Various tests have been devised for the detection of simulated monocular blindness. The one most used has been Graefe's prism test. If the patient can be made to admit double vision when a prism is held before the well eye, vision with both eyes is proved. A very simple test suggested by Warlamont may sometimes succeed, and, in his hands, has proved conclusive even as legal evidence. He displaces the axis of one eye by slight pressure upon the ball with the finger, and shows the suspected person two small dots on a piece of paper. If he says there are four, he is at once convicted. It must be remembered that these tests do not show how much the eye can see, and do not even prove useful vision. This can sometimes be done by an equally simple test suggested by Javal. He causes the person to read while a ruler is held three or four inches from the face, and directly in front of the nose. As part of the print is concealed from each eye by the ruler, it can be read continuously only by the use of both. An elegant but most difficult means of detection is afforded by the stereoscope (Schweigger, *N. Y. Med. Jour.*, Feb., '66). A test that has proved very satisfactory in my hands, is one that I first employed in a case reported in the *American Journal of Medical Sciences* for October, 1873. It consists in placing a strong convex lens before the well eye, and requesting the patient to read print held considerably beyond its focal distance. If he reads at all he must read with the blind eye, as the lens used in this way excludes distinct vision from the other as effectually as an opaque screen. Suspicion is less apt to be excited if the trial frames are used with a glass of low power before the blind eye. This simple test not only establishes the fact of vision, but enables us to determine its degree, and even to measure the accommodation. Three of my patients were detected in this way; in one case, at least, after a careful trial of the prism test had completely failed.

When blindness of both eyes is simulated, we are, of course, deprived of any optical means of detecting it. Etherization, as suggested in an article on malingering by Drs. Mitchell, Morehouse, and Keen (*American Journal of Medical Sciences*, Oct., '64), might prove successful. They found it so in deafness; and a case of hysterical deaf-dumbness was detected and cured in this way, some years ago, by Dr. Hutchinson, at the Episcopal Hospital.

These cases of hysterical blindness offer a curious and most interesting psychological problem. In some there is evidently a more or less deliberate deception, the result of an insane craving for sympathy or personal importance, or the motiveless freak of a disordered mind. Patients of this class are like the fasting girls who develop a superhuman ingenuity in the effort to make it appear that they live without eating. One of the patients referred to, after obstinately maintaining the deception for two years, abandoned it at once on detection. In the case of others, however, the charge of intentional deception can by no means so easily be maintained. Indeed, a careful consideration of their other symptoms, their surroundings, and their previous good character, is almost enough to acquit them of acting a part. I have sometimes suspected that, though they read well enough unconsciously, they might not be capable of conscious vision with the affected eye ; that there might be some mysterious derangement of the process of perception —a kind of negative hallucination, if such an expression could be allowed.

Though it is often a comfort, in doubtful cases, to remember that patients are not always what they seem, we cannot be too careful to avoid classifying a case as "nervous" until every possible organic change has been rigidly excluded, or supposing that we have really explained our patient's symptoms when we have called them hysterical. It is too often true that, as Charcot says, neuroses bear within them the germs of material lesions, and that a disease, apparently nervous, may at any moment become an organic disease.

The ophthalmic surgeon meets daily with patients whose symptoms not many years ago might well have been classified as hysterical, but whom the deeper knowledge gained by the ophthalmoscope and optical tests now proves to have a substantial basis for their complaints. Doubtless the limits of this convenient term will be still further restricted, in proportion as our knowledge of pathology expands and our means of accurate diagnosis are extended.

The discussion on Dr. Harlan's paper was opened by Dr. WM. F. NORRIS, who said he agreed with Dr. Harlan in regard to the importance of hysterical eye symptoms. He thought we should be on our guard in making the diagnosis of hysterical eye affections, particularly as central organic nervous disease was sometimes present without optic atrophy or other ophthalmoscopic appearances.

Dr. WM. THOMSON said he was much interested in Dr. Harlan's paper. He had, however, recently adopted a special method of treating hysterical eye affections. He said he had a case some months ago—a woman, who was blind in her left eye. The eye-ground was normal. She had frequent hysterical attacks. She was deaf in one ear, could not taste or smell, temperature abnormal, skin pallid, and there was loss of sensation in one half of the body. About that time Burquism or metallotherapy was brought to his attention. He tried it in this case, and found that iron was the metal to which she responded. He put her on this and she gradually recovered. Her sight returned. This woman's circulation was poor on the left side. He thought that circulatory disturbances were often at the root of these hysterical conditions, and that the application of appropriate metals had a decided effect in such disturbances.

Dr. WM. S. LITTLE said, in no class of diseases does the physician feel the necessity of knowing how to handle all the "scopes," in order to exclude or recognize diseased conditions, as in these cases of hysteria. It has been my habit to classify these cases as follows: Cases of hysteria manifested in the eye alone, without any lesion in the eye or elsewhere in the body. Cases of hysterical manifestations in the eye, with lesions elsewhere in the body and none in the eye. The same, with lesions elsewhere and in the eye. Another class of cases with hysterical conditions in other parts of the body, due to ocular conditions. The first class of cases are rare, and a few kind words or a little electricity may suffice for treatment; but in the other cases, to decide on the proper plan of treatment calls for more discrimination, and these cases will go from physician to physician till they may even, as the author of the paper says, fall into the hands of the gentlemen who divide the internal rectus.

Dr. WM. OSLER mentioned the case of a girl suffering from hysterical blindness in the London Hospital in 1873. Various tests were employed without success. One of the surgeons suddenly held up before her a large frog, which caused her to scream and roundly abuse the doctor, and immediately cured her of her blindness.

Dr. CHARLES K. MILLS said that the tendency, during the discussion, seemed to be to regard all cases of hysterical blindness as due to unmitigated shamming. While simulation was an element in many cases of true hysteria, and while in what might be termed pseudo-hysteria it was the chief or only element, all cases of hysterical blindness, or of other hysterical sensory disorders, were not to be explained in this way. The activity of the cortical areas concerned with conscious perception was in abeyance in many of these cases. Sudden and unexpected impressions aroused these centres to action, and thus accounted for the sudden cures, which were regarded as instances of detection of imposture. Imposture was present sometimes, but not always.

Dr. LOUIS J. LAUTENBACH said that in connection with the subject under discussion, he would briefly report the following case:

A colored woman, twenty-six years old, a cook, strong, stout, and apparently healthy, presented herself, with a history of sudden loss of sight two days previously. Vision of her right eye was $\frac{5}{6}$; left eye counts fingers at one foot. It improved by glasses. The optic nerves were very slightly pale, the vessels normal. Both eyes were hypermetropic; the right slightly more than 2 D., the left somewhat more than 1 D. The left iris was dilated, not reacting to light. She was placed on iodide of potassium, 3 grs. in compound tincture of gentian, three times a day. On the 20th inst. her vision in the left eye was $\frac{4}{60}$; on the 22d inst. $\frac{5}{6}$, and on the 24th $\frac{5}{4}$. She was profuse in her expressions of gratitude for, as she considered it, her wonderful recovery.

Dr. S. D. RISLEY said he felt indebted to Dr. Harlan for calling attention to the hysterical affections of the eye. He thought, however, that in ophthalmic practice it was peculiarly difficult to draw the line between hysterical symptoms and those having a distinct pathological basis or a physiological anomaly to explain them. The intricate anatomy of the eye was such as to render its proper performance of function especially liable to be influenced by many derangements of the general system. The state of health underlying the group of symptoms characterized by the term hysteria was especially prone to effect a disturbance of the visual function. The disturbance, however, differed from the ordinary manifestations of hysteria, in that the symptoms had a demonstrable physical cause, were beyond the control of the patient, and were constant during the existing state of health. Thus the feeble innervation of the hysterical patient was liable to diminish the range of accommodation and power of convergence, rendering the comfortable use of the eyes impossible. Again, the feeble or deranged circulation in the hysterical individual may set up a group of symptoms in the eye presenting many of the characteristics of serious disease—which, however, are not simulated, but are, in fact, a relative glaucoma. While there is no absolute increase of intra-ocular tension, the normal tension of the eyeball is sufficient to interrupt the entrance of the feeble blood stream into the eyes, and thus is set up the same group of symptoms as are present in actual increase of tension, viz., inadequate blood supply to the retina, contracted field of vision, impaired central perception, diminished range of accommodation, inability to use the eyes, particularly at a near point.

Dr. J. T. ESKRIDGE presented a paper on, "A Case of Tumor of the Cerebellum with Monocular Hemianopsia." (See p. 1.)

LEWIS BRINTON, M.D., *Recorder.*